



Environmental Science

Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet.



Welcome to the Environmental Science Merit Badge with Ms. Winslow!

This badge is required for Eagle and is one of the harder badges to earn so I will be walking you through it as best as I can and hopefully will manage to make it a little fun too!

Before our next meeting please complete the following 4 things on your own.

1. Read the pamphlet
2. Fill out the timeline and vocab in the workbook
3. Create a "Wanted Poster"
4. Watch your ecocolumn and be ready to talk about it next month

If you have questions, please don't hesitate to contact me:

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1. Make a timeline of the history of environmental science in America.

1500s	
1600s	
1700s	
1800s	
1900s	

2000s

Identify the contribution made by the Boy Scouts of America to environmental science. Include dates, names of people or organizations, and important events.

Date	People/Organizations	Event

2. Define the following terms: population, community, ecosystem, biosphere, symbiosis, niche, habitat, conservation, threatened species, endangered species, extinction, pollution prevention, brownfield, ozone, watershed, airshed, nonpoint source, hybrid vehicle, fuel cell.

Population:

Community:

Ecosystem:

Biosphere:

Symbiosis:

Niche:

Habitat:

Conservation:

Threatened species:

Endangered species:

Extinction

Pollution prevention:

Brownfield:

Ozone:

Watershed:

Environmental Science

Scout's Name: _____

Airshed:

Nonpoint source:

Hybrid vehicle:

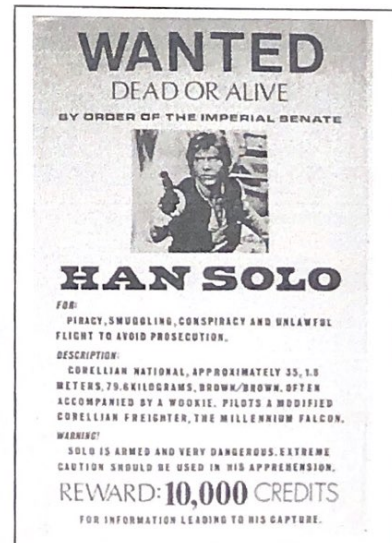
Fuel cell:

Wanted

As the international travel and trade has proliferated in the last few centuries, flora and fauna that have the ability to quickly adapt to new habitats, threaten to subsume the ecological niches of endemic species the world over. Smuggled in the holds of a cargo ships, as stowaways on international airline flights, or transported in the soil of unassuming houseplants; invasive species are the outlaws of the biosphere. In this activity, you will create a "Wanted" poster for an invasive species.

- "Identifying Characteristics" (physical description)
 - "Aliases" (scientific name and any other common names)
 - "Crimes Committed" (ecological problems caused)
 - "Suspected Hideouts" (description of preferred habitat)
 - "Last Seen" (range/areas in U.S. it has invaded)
 - Additional creative categories?
- You must research your species, and completely encapsulate their list of "crimes" on the "poster."

My species is: _____



4. Choose two outdoor study areas that are very different from one another (e.g., hilltop vs. bottom of a hill; field vs. forest; swamp vs. dry land). For BOTH study areas, do ONE of the following:
- a. Mark off a plot of 4 square yards in each study area, and count the number of species found there. Estimate how much space is occupied by each plant species and the type and number of non-plant species you find.

Study Plot Location 1: _____ Number of Species: _____

Plant Species	Space each occupies

Non-Plant Species	Number found

Study Plot Location 2: _____ Number of Species: _____

Plant Species	Space each occupies

Non-Plant Species	Number found

[illegible]

Report to your counselor orally or in writing the biodiversity and population density of these study areas.

Species Sign-up

1. Asian clam (*Corbicula fluminea*)
2. Asian swamp eel (*Monopterus albus*)
3. Chinese mystery snail (*Cipangopaludina chinensis malleata*)
4. Water hyacinth (*Eichhornia crassipes*)
5. Snakehead fish (*Channa micropeltes*)
6. Yellow iris (*Iris pseudacorus*)
7. Nutria (*Myocastor coypus*)
8. Kudzu (*Pueraria Montana* var. *lobata*) - John
9. Redbelly tilapia (*Tilapia zillii*)
10. Zebra mussel (*Dreissena polymorpha*)
11. European starling (*Sturnus vulgaris*)
12. Fire ant (*Solenopsis invicta*) - Axel
13. Sea Lamprey
14. Grass Carp, Buffalo Carp
15. Red Fox (native to Europe) Sy
16. Rainbow trout, Brown Trout (brook trout are native) introduced outside of native habitats
17. Feral cats, dogs
18. Coyotes in East Madden
19. Walking catfish in Florida
20. Capybara
21. Rabbits
22. Cane toads (Australia) Alex
23. Brown tree snake (Guam)
24. Mongoose in Hawaii
25. Rats in Hawaii Jefferson

